

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 92-97

NPDES PERMIT NO. CA0038440

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

EAST BAY MUNICIPAL UTILITY DISTRICT  
SPECIAL DISTRICT NO. 1  
WET WEATHER OVERFLOW FACILITIES  
ALAMEDA AND CONTRA COSTA COUNTIES

The California Regional Water Quality Control Board, San Francisco Bay Region (the Board) finds that:

1. East Bay Municipal Utility District, Special District No. 1 (the discharger) submitted a National Pollutant Discharge Elimination System (NPDES) permit application dated September 24, 1991, for revision of NPDES No. CA0038440.
2. The discharger is currently subject to two NPDES permits, one for discharges from wet weather overflow structures (Order No. 87-18, adopted on March 18, 1987, as NPDES permit No. CA0038440) and the other for year-round discharge from its treatment plant (Order No. 89-149, adopted on September 20, 1989, as NPDES permit No. CA0037702).
3. The discharger currently discharges dilute sewage from seven overflow structures that are part of its interceptor system, and disinfected sewage from the Oakport wet-weather treatment facility. Discharge occur intermittently as a result of infiltration/inflow to the sanitary sewer system during winter storm events. The seven locations are : Point Isabel, Cerrito Creek, Temescal Creek, Oakland Inner Harbor (Alice Street), Oakland Inner Harbor (Webster Street), Elmhurst Creek, and San Leandro Creek (see attachment 1). During an average winter, overflows occur 10 times and result in a discharge of about 180 million gallons , most of this at the two ends of the interceptor (Point Isabel and San Leandro Bay). The overflows occur near the shoreline and receive little initial dilution. All seven discharge locations are either part of Central San Francisco Bay or streams tributary to the Central Bay.
4. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains a listing of beneficial uses and water quality objectives for surface waters in the region. It prohibits discharges that do not receive minimum

initial dilution of 10:1 unless certain conditions are satisfied. It also sets a wet weather overflow policy to control such overflows as a function of the beneficial uses to be protected in the vicinity of the overflows.

5. The beneficial uses of Central San Francisco Bay and contiguous water bodies are:
  - Industrial process supply
  - Industrial service supply
  - Navigation
  - Water contact recreation
  - Non-contact water recreation
  - Commercial and sport fishing
  - Wildlife habitat
  - Preservation of rare and endangered species
  - Fish migration
  - Fish spawning
  - Shellfish harvesting
  - Estuarine habitat
6. Discharges from the seven overflow structures consist of dilute sanitary sewage and storm water, and contain pollutants typical of these two sources. These overflows have high concentrations of coliform bacteria and lead. Studies by the discharger found that Basin Plan receiving water objectives for total coliform bacteria were routinely exceeded in the vicinity of the overflow structures, due to both overflows and urban runoff during wet weather. Significant shellfish beds exist at Point Isabel, the Berkeley and Emeryville marinas, Emeryville Crescent, and San Leandro Bay.
7. EPA Region IX has determined that secondary treatment effluent limits do not apply to dischargers from the seven overflow structures. This determination is contained in a June 18, 1986 letter from Region IX staff and is based on the conclusion that these structures are not part of a publicly-owned treatment works (POTW) as that term is defined by EPA regulation.
8. In the absence of secondary treatment effluent limits, the Board must determine technology-based limits for conventional pollutants (Best Conventional Pollution Control Technology, or BCT) and other pollutants (Best Available Technology Economically Achievable, or BAT) in the discharge. This is a case-by-case determination, because there are no EPA guidelines for wet weather overflows or any similar discharges. For most pollutants in the discharge, BCT or BAT either cannot be determined or mean no control. The two exceptions are disinfection (high rate chlorination to remove bacteria) and screening (to remove floatable

material). Water quality objectives in the Basin Plan are equally or more stringent than technology-based limits for these two pollutants. In particular, the Basin Plan wet weather overflow policy mandates more thorough disinfection for discharges in the vicinity of shellfish beds, as is the case at Oakport and Point Isabel.

9. The discharger proposed and subsequently started design and construction of the wet weather facilities to reduce and treat wet weather overflows. The proposed project would increase the interceptor's peak capacity from 290 to 760 million gallons per day (mgd). It would reduce all untreated wastewater overflows along the District-owned North Interceptor, Adeline Interceptor, and south Interceptor. Additionally, overflows to south San Leandro Bay and San Leandro Creek would be reduced. It would eliminate untreated sewage overflows at all seven of the overflow sites generated by a 5-year storm event. The discharger has completed construction of screening and disinfection facility at one site (Oakport), has started construction of other facility at Pt. Isabel site, and would construct two more such facilities (San Antonio Creek, and Coast Guard Island). These facilities would remove floatable material and meet Basin Plan objectives for bacteria in the effluent. The interceptor connections to all seven overflow sites still exist.
10. The discharger's proposed project, if properly designed, constructed, and operated, will meet Basin Plan objectives for bacteria and floatable material and will comply with the Basin Plan's conceptual approach for wet weather overflows.
11. Discharges at the proposed Point Isabel and Oakport facilities will not achieve a minimum initial dilution of 10:1. The Basin Plan allows exception to this 10:1 requirement if (1) meeting it would place an inordinate burden on the discharger relative to the beneficial uses protected and (2) an equivalent level of environmental protection can be achieved by an alternate means. The minimum cost to achieve 10:1 dilution at these two facilities is \$60-80 million (over and above costs for the discharger's proposal). Essentially no environmental benefit would result, since the proposed discharges will be disinfected and since they will occur only during periods of significant urban runoff, itself a significant contributor of coliform bacteria. An exception to the 10:1 requirement is therefore warranted, provided that the proposed facilities are designed, built, and operated to assure high reliability.
12. The discharger has an approved EPA Local Pretreatment Program for its main treatment plant. This program, while

aimed at year-round source control, will also reduce the concentrations of trace metals and toxic organic compounds in wet weather discharges from the interceptor system.

13. Federal Regulations for storm water discharges were promulgated by the US Environmental Protection Agency on November 16, 1990. The regulations [40 Code of Federal Regulations (CFR) Parts 122, 123 and 124] require specific categories of industrial activities which discharge storm water associated with industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.
14. The State Water Resources Control Board has required industrial facilities to obtain coverage under the SWRCB General Permit or apply for an individual permit by October, 1992. The discharger has requested the Regional Board to address all storm water flows from wastewater treatment facility process areas in this permit. These storm water flows are directed to the main wastewater treatment plant headworks and are treated along with the wastewater to comply with the requirements specified in the existing NPDES permit. Therefore, a separate NPDES permit to regulate storm water discharges from the wastewater treatment facilities is not necessary.
15. This order serves as an NPDES Permit, revision of which is exempt from the provisions of Chapter 3 (commencing with Section 21100 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
16. The discharger and interested agencies and persons have been notified of the Board's intent to revise the NPDES permit for this discharge and have been provided an opportunity to submit their written comments and appear at the public hearing.
17. The Board at a properly-noticed public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of dry-weather waste from the wet-weather overflow structures or proposed wet-weather treatment facilities is prohibited.
2. Discharge to waters of the State is prohibited except as defined below. The discharger shall design and construct wet-weather treatment facilities to achieve a long term average of ten discharges per year per discharge location for a total of 100 million gallons per year. These long term design criteria will not be used to determine compliance or non-compliance with this prohibition. The discharger shall prepare a wet weather facilities operation plan which is consistent with the following objectives:
  - a. Maximize the volume of wastewater delivered to the main wastewater treatment plan, consistent with that plant's hydraulic and treatment capacities, and
  - b. Assure that all wastewater entering the discharger's interceptor receives some treatment prior to discharge (at least floatables removal and disinfection/dechlorination).

This operation plan must be submitted to the Board prior to start-up of the wet weather treatment facilities. The plan will be subject to the Executive Officer's review and approval. The discharger's compliance with the operation plan will constitute compliance with this prohibition. Conversely, failure to comply with the plan will connote non-compliance with this prohibition. The operation plan may be part of the discharger's Operation and Maintenance Manual (see provisions).

B. Effluent Limitations

1. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.
2. Total chlorine residual in the discharge shall not exceed a concentration of 0.0 mg/l (instantaneous maximum).
3. Total Coliform limitation
  - a. For discharges to Oakland Inner Harbor from the San Antonio Creek and Cost Guard Island

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

EAST BAY MUNICIPAL UTILITY DISTRICT  
SPECIAL DISTRICT NO. 1  
WET WEATHER FACILITIES  
ALAMEDA AND CONTRA COSTA COUNTIES

NPDES PERMIT NO. CA 0038440  
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CONSISTING OF

PART A AND PART B

facilities, the moving median value for the MPN of total coliform in any five consecutive samples<sup>1</sup> shall not exceed 1,000 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN per 100 ml.

- b. For discharges from the Point Isabel and Oakport facilities, the moving median value for the MPN of total coliform in any five consecutive samples<sup>1</sup> shall not exceed 240 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN per 100 ml.

Notes: (1) Because the discharge is intermittent, 5-sample medians shall be calculated only from samples taken from the same discharge event. A new discharge event occurs if the discharge is interrupted for four or more hours.

c. Receiving Water Limitations

- 1. The discharger of waste shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating material obviously of sewage origin;
  - b. Floating, suspended, or deposited macroscopic particulate matter or form;
  - c. Bottom deposits or aquatic growths;
  - d. Alteration of temperature, turbidity, or apparent color beyond natural background levels;
  - e. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
  - f. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result on biological concentration.
- 2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State within one foot of the water surface:
  - a. Dissolved oxygen            5.0 mg/l minimum. Median of any three consecutive months shall not be







less than 80% saturation. When natural factors cause lesser concentrations than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

- b. Dissolved sulfide 0.1 mg/l
- c. pH Variation from natural ambient pH by more than 0.5 pH units
- d. Un-ionized ammonia 0.025 mg/l as N (annual median)  
0.16 mg/l as N (maximum)

- 3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order accordingly.

D. Provisions

- 1. The requirements prescribed by this Order supersede those prescribed by Order No. 87-18. Order No 87-18 is hereby rescinded.
- 2. The discharger shall comply with all sections of this Order immediately upon adoption.
- 3. The discharger shall comply with the attached Self-Monitoring Program. The Executive Officer may make minor amendments to it pursuant to federal regulations (40 CFR 122.63).
- 4. The discharger shall comply with all items in the attached "Standard Provisions, Reporting Requirements, and Definitions" dated December 1986, with the exception of items A.18, B.2, and C.8.
- 5. The discharger shall prepare an Operation and Maintenance Manual for the proposed wet-weather treatment facilities, to be submitted to the Board prior to putting the facilities into operation. The discharger shall review and update its Operation and Maintenance Manual annually or, in the event significant facility or process changes, shortly after

treatment facility. The station shall be located at a point prior to discharge where all waste tributary to the outfall is present and all treatment is completed.

Effluent sampling will be required only during discharge events, which may last from less than an hour to over a day. Composite sampling shall commence within 1 hour after a discharge begins and continue until the discharge ceases, but not to exceed 24 hours. For monitoring purposes, a discharge ceases if there is no effluent flow from the facility for a period of at least 4 hours. Any effluent flow after 4 hours would constitute a new discharge.

The discharger shall report the date and time when discharges start and stop and the duration of each discharge. The discharger shall also report recent rainfall in its service area (during and prior to discharge) and influent flow to the discharger's main treatment plant (average and maximum daily flow on discharge days).

The discharger shall take effluent samples according to the schedule in Table 1.

Table 1: Effluent Monitoring Schedule

<u>Parameter</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
Flow (mgd)	Continuous	Continuous during discharge
BOD	C-X <sup>1</sup> (X<24)	1/discharge <sup>2</sup>
Suspended Solids (mg/l)	C-X	1/discharge
Oil and Grease (mg/l)	Grab <sup>3</sup>	1/discharge
pH	Grab	1/discharge
Dissolved Oxygen (mg/l and % saturation)	Grab	1/discharge
Temperature (°C)	Grab	1/discharge
Total and Fecal Coliform (MPN/100 ml)	Grab	1/hour during discharge <sup>4</sup>
Chlorine residual (mg/l)	Continuous <sup>5</sup>	Continuous or 1/hour during discharge
Trace metals <sup>6</sup> (mg/l)	C-X (X<24)	No more than 1/month
Phenolic compounds (mg/l)	C-X (X<24)	No more than 1/month
PAH <sup>7</sup> (mg/l)	C-X (X<24)	No more than 1/month

Notes:

1. Composite sample (1/hour) over X hours (the duration of the discharge), not to exceed 24 hours.
2. One composite sample per discharge event, not to exceed 2 composite samples per week.
3. May use composite sample if Standard Methods used to assure accurate results.
4. Because of the difficulty of analyzing coliform samples from an intermittent discharge within the maximum holding period, the following selective sampling program will be used. At least twice per rainfall year (October 1 to September 30) the discharger shall perform a detailed analysis of disinfection results during discharge event. Total and fecal coliform samples shall be taken at least once per hour for the full duration of the discharge. In addition, the discharger shall take at least one grab sample for any discharge lasting 24 hours or longer. The discharger shall also provide a continuous recording of chlorine dosage (mg/l) and detention time in the contact chamber for all discharges.
5. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate monitoring.
6. Measure concentrations of ten metals: arsenic, cadmium, chromium (hexavalent and total), copper, lead, mercury, nickel, silver, zinc, and cyanide.
7. Polynuclear aromatic hydrocarbons, as identified in EPA Method 601.

C. Receiving Water Monitoring

The discharger shall propose specific locations for receiving water monitoring in the vicinity of each of the treatment facilities. This proposal shall be received by the Board at least 60 prior to the discharger putting the respective facilities into service. The proposal shall be subject to approval by the Executive Officer.

The discharger shall conduct such monitoring twice per rainfall year (October 1 through September 30). Fewer efforts may be made under the following circumstances: (1) treatment facility not in service yet, (2) fewer than 2 discharges for the year at the facility, or (3) discharger unable to monitor during the prescribed period (below) due to safety concerns (e.g. inclement weather or darkness).

Receiving water monitoring shall be performed either during a discharge or within eight hours after the discharge cases. For each monitoring effort, the discharger shall record the following:

- Date and time of monitoring
- Hours since the discharge ceased (if applicable)
- Hours since rainfall ended (if applicable)
- Stage of the tide
- Air temperature
- Wind direction and velocity
- Rainfall (inches) for last 5 days
- Presence of floating or suspended materials of waste origin (if present, note possible source and affected area)
- Evidence of beneficial water uses (e.g. presence of water-associated wildlife, fisherman, shellfish harvesting, boaters, waterskiers, and other water-contact or water-oriented recreation)

The discharger shall take receiving water samples according to the following schedule:

<u>Parameter</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
pH	Grab <sup>1</sup>	1/station
Dissolved Oxygen (mg/l and % saturation)	Grab	1/station
Temperature (°C)	Grab	1/station
Total and Fecal Coliform (MPN/100 ml)	Grab	1/station
Ammonia as N (mg/l)	Grab	1/station
Non-dissociated hydroxide (mg/l)	Grab	1/station
Trace metals <sup>2</sup> (mg/l)	Grab	1/station

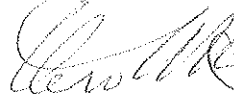
Notes:

1. Grab samples to be taken within 1 foot of water surface.
2. Measure concentrations of ten metals: arsenic, cadmium, chromium (hexavalent and total), copper, lead, mercury, nickel, zinc, silver, and cyanide.

I, Steven R. Ritchie, Executive Officer, hereby certify that the following Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in the Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. 92-XX.

2. Has been ordered by the Board on August 19, 1992.
3. May be revised at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

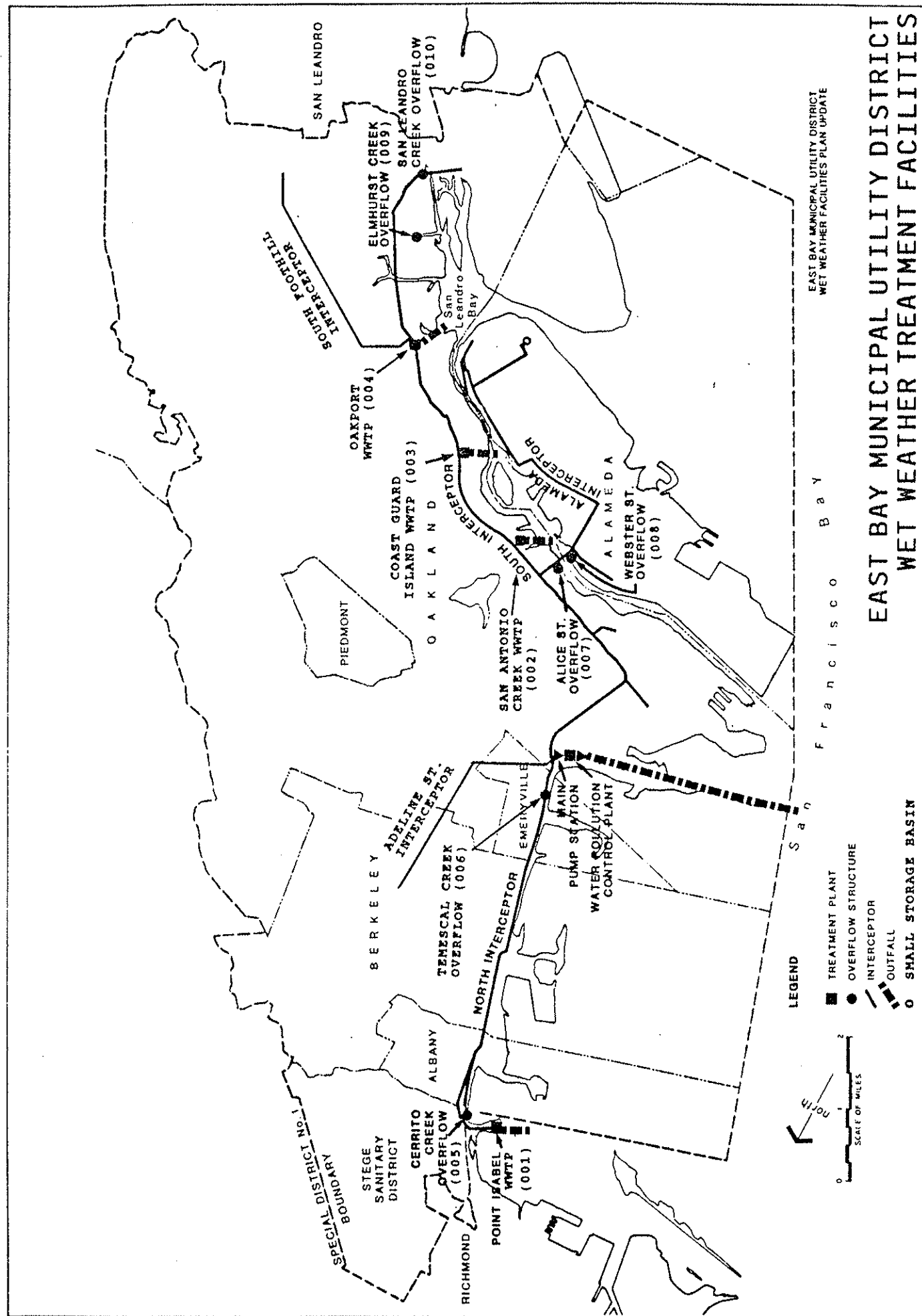


STEVEN R. RITCHIE  
Executive Officer

8/19/92  
Effective Date

Attachments: Part A (December 1986)

Location Map: EBMUD interceptor overflow structures and proposed wet-weather treatment plants



# EAST BAY MUNICIPAL UTILITY DISTRICT WET WEATHER TREATMENT FACILITIES

EAST BAY MUNICIPAL UTILITY DISTRICT  
WET WEATHER FACILITIES PLAN UPDATE